IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Peter Van Voris, *et al.*
Serial No.	:	10/698,722
Filed:	:	October 31, 2003
For:	:	Sustained Release Pest Control Products and Their Application
TC/AU	:	1615
Examiner	:	Neil S. Levy
Attorney Docket No.	:	TMG 2-001-3-3

BOARD OF PATENT APPEALS AND INTERFERENCES
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

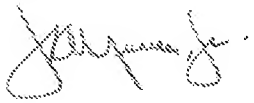
SUPPLEMENTAL APPELLANTS' BRIEF ON APPEAL

Sir:

Responsive to a Communications mailed January 30, 2009 and June 18, 2009, submitted herewith is Appellant's Revised Brief on Appeal as prescribed in 37 C.F.R. § 41.31. Reversal of the primary examiner's rejection of the appealed claims and their allowance is respectfully requested.

The requisite fee of $250.00 as required in 37 C.F.R. § 1.17(c) has submitted already. Any additional payments that may be required should be charged to Deposit Account No. 13-4830.

Respectfully submitted,



Date: 23 June 2009

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Real Party in Interest

Appellants originally assigned the appealed application to TermiGuard, Inc., who assigned it to the current owner, BioGuard Technologies, Inc., a Delaware corporation having its principal place of business in Richland, WA.

Related Appeals and Interferences

There are no related appeals or interferences known to Appellants, their legal representatives, or assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal other than Appellants' copending Application serial number 10/816,095 which forms the basis of a non-statutory obviousness-type double patenting rejection of the appealed claims. Appellants submitted a statutory disclaimer in order to overcome the non-statutory obviousness-type double patenting rejection.

Status of Claims

67 claims were submitted with the application as originally filed.

An Office Action was mailed on January 11, 2006, restricting the claims between Group I (claims 1-35) and Group II (claims 36-67), and a species election regarding the polymer and the pesticide. This Office action reports a telephonic election by the attorney of record to prosecute the Group I claims 1-35 and the election of the following species: polyurethanes and permethrin. Claims 1-35 read on these species. This Office action further contained a rejection of claims 1, 2, 4-17, 19, and 23 on the ground of non-statutory obviousness-type double patenting over claims 1-20 of Applicants' copending Application serial number 10/816,095. Applicant offered a terminal disclaimer upon the allowance of claims. Claims 1-35 further were rejected under the provisions of 35 U.S.C. § 103(a) as being unpatentable over Kodama (U.S. Patent No. 5,747,510) and Van Voris (U.S. Patent No. 5,801,194) in view of Knudson (U.S. Patent No. 4,849,006) and Hackh's (Hackh's Chemical Dictionary, p. 168, 1969). Claims 1, 3, 18, 20, 23, 25, 26, 29-32, and 35 also were rejected under the provisions of 35 U.S.C. § 102(b) by or, in the alternative, under 35 U.S.C. § 103(a) as obvious, over Dittmar (U.S. Patent No. 4,066,777).

Appellants filed an amendment and response on March 14, 2006, amending claim 1 to call for use of an "exfoliated" colloidal claim, withdrawing claims 36-67, confirming the election to prosecute the Group I claims, and confirming the noted species elections. Claims 33-35 also were amended to replace "composition" with "method" in line 1.

An Office action was mailed on June 2, 2006, again rejecting claims 1, 2, 4-17, 19, and 23 on the ground of non-statutory obviousness-type double patenting over claims 1-20 of Applicants' copending Application serial number 10/816,095. Claims 1-35 also were finally rejected under the provisions of 35 U.S.C. § 103(a) as being unpatentable over Kodama (U.S. Patent No. 5,747,510) and Van Voris (U.S. Patent No. 5,801,194) in view of Knudson (U.S. Patent No. 4,849,006) and Hackh's (Hackh's Chemical Dictionary, p. 168, 1969).

In a response filed August 8, 2006, Appellants amended claim 1 to replace "associating" with "applying a layer". Claims 27, 28, and 36-67 were cancelled. A terminal disclaimer based on Applicants' copending Application serial number 10/816,095 also was submitted.

An Advisory action was mailed on August 23, 2006 refusing entry of the claim amendments in Appellants' August 8,2006 amendment.

Appellants filed a request for continued examination on August 28, 2006, requesting entry of the claim amendments in its August 8, 2006 response.

An Office action was mailed on May 18, 2007, rejecting claims 1-20, 23-26, and 29-35 under the provisions of 35 U.S.C. § 112, first paragraph, as "bead" is not described in the

application. Claims 1-20, 23-26, and 29-35 wre rejected under the provisions of 35 U.S.C. § 103(a) as being unpatentable over Kodama (U.S. Patent No. 5,747,510) and Van Voris (U.S. Patent No. 5,801,194) in view of Knudson (U.S. Patent No. 4,849,006) and further in view of Beall (U.S. Patent No. 5,730,996).

Appellants filed a response on August 10 and a supplemental response on November 12, 2007. No claims were amended.

An Office action was mailed on February 7, 2008, rejecting claims 1-20, 23-26, and 29-35 under 35 U.S.C. § 103(a) as being unpatentable over Kodama (U.S. Patent No. 5,747,510) and Van Voris (U.S. Patent No. 5,801,194) in view of Knudson (U.S. Patent No. 4,849,006) and further in view of Beall (U.S. Patent No. 5,730,996).

An Advisory action was mailed on July 28, 2008.

Appellants filed another request for continuing examination on June 24, 2008. An amendment to the claims was submitted also, wherein claim 1 was amended to call for use of a heated exfoliated clay blended with heated pest control agent in forming the barrier. A declaration of Dr. Dominic A. Cataldo accompanied the amendment.

An Office action was mailed on January 30, 2008 again rejecting claims 1-20, 23-26, and 29-35 under 35 U.S.C. § 103(a) as being unpatentable over Kodama (U.S. Patent No. 5,747,510) and Van Voris (U.S. Patent No. 5,801,194) in view of Knudson (U.S. Patent No. 4,849,006) and further in view of Beall (U.S. Patent No. 5,730,996).

The instant appeal ensued.

Status of Amendments

All of the amendments submitted by Appellants have been entered.

Summary of the Claimed Subject Matter

The disclosed subject matter is directed to applying a barrier to a structure to prevent the infiltration of pest species. A layer of the composition associated with the structure. The composition is formed from a polymer component having dispersed therein beads formed from colloidal clay and adsorbed pest control agent. Colloidal clays (*e.g.*, nano-clays) adsorb more pest control agent than do standard clays and release the adsorbed pest control agent at a slower rate than do standard clays.

The inventive composition can be in the form of a continuous or discontinuous layer thereof associated with the substrate to be protected. Preferably, then, the inventive composition is "film-forming" in that it forms a film, which preferably is continuous, recognizing that discontinuous films may provide adequate protection against certain pest species under certain circumstances. The inventive coating composition also can contain adhesive ingredients (*e.g.*, low Tg resins, tackifiers, *etc.*) that render it a conventional "adhesive" in order to adhere well to certain structures and to even join two structural surfaces together. Moreover, by careful formulation, the inventive composition may exhibit the thixotropy and adhesive characteristics to render it a caulk or sealant and, thus, protect cracks in structures. Thus, the term "composition" is to be construed broadly for present purposes in that the inventive pest species barrier composition may perform as a coating on the structure to be protected even if it conventionally also may termed an adhesive, caulk, sealant, or other designation.

Initially, Appellants preform "a bead comprising colloidal clay and adsorbed pest control agent" and then the "bead is dispersed in said polymer component". This sequence is important in that the art, uniformly mixes all of the ingredients together.

Advantages realized by Appellants' different process, include:

1. The active ingredient/nanoclay pellet will contain more active ingredient that can allow for a longer product life-span.
2. For a given life-span, fewer pellets can suffice.
3. Preforming can provide a greater variety of release rates because there are more different positions that are occupied. Some positions tightly bind the active ingredient, others weakly bind it. This phenomenon can translate into a smoother release of active ingredient.
4. During the product lifespan, some polymers may become bound to the nanoclay as the active ingredient departs. This can increase the tortuosity of the product; thus, prolonging the lifespan of the product.

The bottom line is that preforming adds to product life and reduces costs per unit time that the product provides protection. Appellants' process, then, is performed with different steps than are proposed in the art and achieves unobvious advantages by dint of such different process steps.

Claim 1 is directed to the application of a barrier to a structure to prevent infiltration of pests. The composition applied (see the appealed application at p. 18, line 14 bridging p. 10, line 5) to the structure (see the appealed application at p. 10, ll. 23-26) is formed from a polymer component (see the appealed application at p. 10, lines 1-23; p. 11, line 20 bridging p. 17, line 5) and a bead of a heated, exfoliated colloidal clay (see the appealed application at p. 8, line 18 bridging page 9, line 15) and heated pest control agent (see the appealed application at p. 17, line 8 bridging p. 18, line 12). The bead is dispersed in the polymer component and applied to the structure.

Grounds of Rejection to be Reviewed on Appeal

Appealed claims 1-20, 23-26, and 29-35 stand rejected under the provisions of 35 U.S.C. § 103(a) as being unpatentable over Kodama (U.S. Patent No. 5,747,510) and Van Voris (U.S. Patent No. 5,801,194) in view of Knudson (U.S. Patent No. 4,849,006) and further in view of Beall (U.S. Patent No. 5,730,996).

Argument

The Kodama Citation

The Kodama patent (5,747,519) is a soil treatment patent. The present invention is not a soil treatment invention; but, rather, the invention pertains to materials that do not release significant amounts of pest control agent into the soil environment. Because of this feature, the products have increased longevity, stability, reduced environmental effects, and lower cost. The statements in col. 1, lines 37-47, pertain to the objects of the invention, not the summary or details of the invention. These statements merely endorse soil treatment in addition to applying a layer of Appellants' composition to a structure, and no more.

Kodama, at col. 4. lines 5-9, lists some materials that are to be used as "fixing agents, dispersing agents, thickening agents, and bonding agents". Significantly, these materials are not conventional "polymers" and are distinctly different from the polymers disclosed in the present application, because the two procedures use materials for different functions. Kodama uses his materials to stick his pesticide to soil particles (*i.e.*, to fix the pesticide to the soil, see, *Hackh's Chemical Dictionary*, p. 269, definition of "fixed", 1969 edition), whereas Appellants use their polymers to make physical barriers (for example, layers, coatings, caulks) and to adhere particles to the barrier material. Kodama's barrier is a layer of treated soil. Appellants "apply a layer" their composition to a structure to be protected, *viz*.:

> The inventive composition forms a continuous or discontinuous layer thereof associated with the substrate to be protected. Preferably, then, the inventive composition is "film-forming" in that it forms a film, which preferably is continuous, recognizing that discontinuous films may provide adequate protection against certain pest species under certain circumstances. The inventive coating composition also can contain adhesive ingredients (*e.g.*, low Tg resins, tackifiers, *etc.*) that render it a conventional "adhesive" in order to adhere well to certain structures and to even join two structural surfaces together. Moreover, by careful formulation, the inventive composition may exhibit the thixotropy and adhesive characteristics to render it a caulk or sealant and, thus, protect cracks in structures. Thus, the term "composition" is to be construed broadly for present purposes in that the inventive pest species barrier composition may perform as a coating on the structure to be protected even if it conventionally also may termed an adhesive, caulk, sealant, or other designation.
>
> Application @ p. 6, ll. 3-15 (emphasis supplied).

In no sense of the term "composition", as defined by Appellants, *e.g.*, a coating, can Kodoma's materials (col. 4, ll. 5-9) be read to teach Appellants' compositions. Thus, Kodama fails to teach Appellants' use of a polymer system to form their "composition" and fails to "apply a layer of" the composition to a structure, as such terms are defined in the present application

and the claims under examination (see, *Phillips v. AWH Corporation*, __ F.3d __, 75 U.S.P.Q.2d 1321, Fed. Cir. 2005).

The Van Voris Citation

Van Voris proposes a controlled release device formed from (a) a low volatility insecticide mixed with a high or medium density polymer and (b) a higher volatility insecticide mixed with a polymer having a low density. Use of carbon black to form "a friable mixture of carbon black and insecticide" (see, for example, claim 2) also is proposed. Appellants found the release rate of Van Voris to be too rapid for their purposes. Lacking in Van Voris is the use of colloidal clay in general, much less an exfoliated clay, and applying a layer of the composition to a structure. Many of Appellants' polymers would be unsuitable for Van Voris in view of the requirement to use a mixture of different density polymers.

The Knudson Citation

Knudson proposes to contact organoclay aggregates with a pesticide (Fig. 1, col. 4, ll. 31, *et seq*.). The pesticide-swollen organoclay, then, is dried and released to the environment. Col. 5, lines 47-60, indicate that Knudson wants the bare product with no other protectants, release rate modulators, *etc*., included. In terms of the claims under examination, Knudson distinctly teaches away from the use of "a polymer component" [claim 1, element (a)(i)].

While at first blush it would appear that Knudson proposes the use of the same clay material as claimed by Applicant's, this is distinctly not the case. Fig. 1 of Knudson and the text of the examples show that Knudson's sorption procedure does not include the key exfoliation step required for the longevity attainable with Appellants' procedure. Knudson specifically refers to Beall, U.S. Patent No. 4,549,966, which does not reveal exfoliation. Thus, Knudson's active/organoclay has a different chemical structure from Appellants' active/organoclay. Knudson refers to his product as an aggregate (see, Fig. 1). Appellants start with the aggregate and convert it to the exfoliated form (see, for example, the present application at p. 8, l. 22 bridging p. 9, l. 7).

Thus, Knudson fails to show use of Appellants' "polymer component" and fails to use an "exfoliated colloidal clay", as recited in the claims (see, *Phillips v. AWH Corporation*, *ibid*.).

The Kodama/Van Voris/Knudson Rejection

> Wood and wood products utilized in a variety of construction applications are frequently structurally degraded by the action of termites, ants, other boring insects, and wood decaying microorganisms. Typically, these wood degrading and decaying organisms migrate to wood structures via the surrounding soil or

> water. This migration may occur whether the structures rest upon concrete foundations, such as in wooden building construction; are in direct contact with the soil, for example fence posts, utility poles, railroad cross-ties, wooden supports, and like structures; or are in the water, such as boats, piers, pier pilings, wooden docks, or other supports. Wood and wood-containing products include, *inter alia*, glued wood products such as, for example, plywood, particleboard, oriented strand board (OSB), medium density fiberboard (MDF), laminated veneer lumber (LVL), laminated beams, and a variety of other engineered wood products. Paper products (especially paperboard and kraft paper) also are subject to degradation by organisms that attack wood. Outdoor furniture also is subject to wood degrading and decaying organisms. In the marine context (including for example, pleasure and commercial craft for use on lakes, rivers, and oceans), the structures additionally may be manufactured from fiberglass, various plastics, metals, ceramics, and other materials.
>
> Application at p. 1, l. 18 bridging p. 2, l. 3.

The Examiner believes it obvious to make a long-term protection barrier according to Kodama and Van Voris, modified to optimize protection by utilizing a colloidal barrier of Knudson.

The shortcomings of this art combination include that Kodama does not show Appellants' "compositions" or "exfoliated colloidal clays" or the "applying a layer" of Appellants' composition containing "beads" to a structure (as such terms are defined in the present application; see, *Phillips v. AWH Corporation*, *ibid* also). Van Voris also fails to show Appellants' "exfoliated colloidal clays", but rather shows "friable" carbon black particles. Van Voris also does not disclose "polymers" where their purpose is to retard the release of pest control agent. Instead, Van Voris expressly teaches the large and quick initial release of pest control agent. Finally, Knudson also fails to teach Appellants' "compositions" or "exfoliated colloidal clays" or the "applying a layer" of Applicants' composition containing "beads" to a structure. This art combination, then teaches the use non-exfoliated colloidal clays using Kodoma's fixing agents (or perhaps Van Voris' density defined polymers). Regardless, such combination fails to render obvious the appealed claims.

The Declaration of Dr. Dominic A. Cataldo

Dr. Cataldo, as an inventor on the appealed application, conducted comparative tests on the pest control agent of Knudson (U.S. Patent no. 4,849.006) and the subject disclosure. The details of the tests and results are set forth in Dr. Cataldo's September 26, 2008 declaration that accompanied Appellants' September 30, 2008 response.

Specifically, Dr. Cataldo notes that Knudson does not disclose or teach mixing of clay and pest control agent at anything but ambient temperature. Thus, Dr. Cataldo repeated the

procedure for loading clay with pest control agent as disclosed by Knudson. Dr. Cataldo also repeated the Knudson procedure, but with heating of the clay and pest control agent, as taught in the above-identified application.

As a comparative point of reference for the physical/dynamics of the experimental systems, Dr. Cataldo compares the behavior of the neat active. In his study, Dr. Cataldo reports complete depletion in 17 days of the neat active that was applied to filter paper, compared to Knudson's 6 days. While in Knudson's system, depletion of organoclay sorbed active occurs within 12-15 days, the disclosed system, a similar nanoclay system but for the loading of heated ingredients, have a depletion rate of 40% of the active lost after 37 days, with a 100% loss time of from about 70 days, using a linear extrapolation method of estimation.

With respect to the loading under heating, Dr. Cataldo reports that attempts to load solvent saturated actives and/or heated/liquid actives into cooler clays has resulted in the actives condensing onto the outer surface of the clays, or with solvent intercalated systems the evaporation of the solvent actually causes the active to leave the clay by entrainment in the evaporating solvent. The latter results in much lower loading rates in the unheated versus heated systems (<20 versus >40% w/w). Since the present procedure employ these systems as active carriers within a secondary polymeric delivery system, the lack of both internal absorption of the active into the clay, and the presence of active external to the clays (Knudson results), results in much higher release rates, and lower functional longevities, which in his applications frequently must function for 1-30 years.

Based on the reported data and other work of Dr. Cataldo's in the development of the disclosed system, he concludes:

(a) These experiments were conducted using the same active ingredient as is used in the examples of U.S. Patent No. 4,849,006 and a variety of organoclays that are within the scope of the appealed application.

(b) U.S. Patent No. 4,849,006 is silent regarding the temperature at which the absorption of the active ingredient into the organoclay occurs. The reported examples imply absorption at ambient temperature. There certainly is no disclosure or teaching to use other than ambient temperature.

(c) The appealed application and thermal experiments show that the release-rate performance of such nanoclay/active ingredient products depend strongly on the temperature at which the liquid pesticide is mixed with the organoclay, *i.e.*, greater intercalation.

(d) The usefulness of these pesticide products is closely related to the number of days in which the active ingredient remains in the end use environment. Our thermal mixing method provides superior longevity.

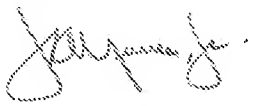
(e) Appellants' cost of attaining a given number of effective days in the environment is lower than that of Knudson due to Appellants' need to use less of the ingredients.

(f) Appellants have found in many other pesticide experiments that the combination of superior composite materials made from absorption of active ingredient into organoclay is greatly enhanced by their dispersal in specific polymer matrices. U.S. Patent No. 4,849,006 (bottom of column 5 and top of column 6) dismisses this aspect by discussing the formulation of the two ingredients with addition ingredients. Appellants form the sorbed product and only then do they combine this composite material with the specific polymer. Appellants have demonstrated in previous experiments that combining all three is not as good.

Conclusion

Accordingly, Appellants respectfully urge the Board to overrule the rejection of the appealed claims and to permit the appealed application to pass to issue.

Respectfully submitted,



Date: 23 June 2009

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CLAIMS APPENDIX

The Appealed Claims

Claim 1. A method for applying a barrier to a structure to prevent the infiltration of pest species, comprising the steps of:

(a) providing a composition, which comprises:

(i) a polymer component; and

(ii) a bead formed from heated exfoliated colloidal clay and heated adsorbed pest control agent,

wherein said bead is dispersed in said polymer component; and

(b) applying a layer of said composition to said structure.

Claim 2. The method of claim 1, wherein said polymer component is one or more of polyethylene, polypropylene, polybutenes, natural rubber, polyisoprene, polyesters, styrene butadiene rubber, polyacrylates, polymethacrylates, polyethylene terephthalate, epoxy resins, unsaturated polyester resins, or polyurethanes.

Claim 3. The method of claim 1, wherein said composition also contains one or more of powdered pepper, a pepper extract, an antimicrobial agent, pigments, ultraviolet radiation absorbers, molecular sieves, or silica gel.

Claim 4. The method of claim 2, wherein said polyurethane polymer component is formed from a non-aromatic diisocyanate.

Claim 5. The method of claim 4, wherein said polyurethane polymer component is formed from said non-aromatic diisocyanate and a diol chain extender of up to 12 carbon atoms.

Claim 6. The method of claim 2, wherein said polyurethane polymer component is enriched in urea linkages.

Claim 7. The method of claim 6, wherein said urea linkage are formed from the reaction of a non-aromatic polyisocyanate with the reaction product of a diisocyanate and a diamine.

Claim 8. The method of claim 7, wherein said diisocyanate is one or more of toluene diisocyanate (TDI), methylene diphenyl diisocyanate (MDI), polymeric methylene diphenyl diisocyanate (PMDI), hexamethylene diisocyanate (HDI), isophorone

diisocyanate (IPDI) and said diamine is one or more of 4,4'-methylene dianiline, 1,4-diaminocyclohexane, 2,4-diaminotoluene, 2,6-diaminotoluene, 1,4-diaminohexane, or an amine-terminated polyether.

Claim 9. The method of claim 7, wherein an excess of polyisocyanate is used to form said reaction product.

Claim 10. The method of claim 2, wherein polyurethane polymer component is formed from an aliphatic or alicyclic isocyanate.

Claim 11. The method of claim 10, wherein said aliphatic or alicyclic isocyanate is one or more of 1,6-hexamethylene diisocyanate (HDI), 1,4-tetramethylene diisocyanate, hydrogenated methylene diphenyl diisocyanate, 1,4-cyclohexane diisocyanate, or isophorone diisocyanate.

Claim 12. The method of claim 10, wherein polyurethane polymer component also is formed from a polyol having a molecular weight of less than about 1,000.

Claim 13. The method of claim 10, wherein said polyurethane polymer component contains hard segments made by one or more of the use of polyisocyanates having greater than 2 isocyanate groups per molecule; use of polyol having a molecular weight of less than about 1,000 and greater than 2 hydroxyl groups per molecule; an excess of isocyanate is used; or reaction of said isocyanate with an amine.

Claim 14. The method of claim 13, wherein said isocyanate is polymeric methylene diphenyl diisocyanate, and said polyol is one or more of trimethylolpropane, glycerin, Sorbitol, glycerin, polyether triols, trimethylol propane polyether triols, or hydrogenated castor oil.

Claim 15. The method of claim 2, wherein polyurethane polymer component is formed from an aliphatic or alicyclic polyol.

Claim 16. The method of claim 15, wherein said aliphatic or alicyclic polyol is one or more of hydroxy terminated polybutadiene, straight chain hydrocarbons that have 8 to 30 carbons with hydroxyl groups at each end, carbocyclic rings that contain from 5 to 32 members with hydroxyl groups that are not on adjacent carbons, or carbocyclic rings that contain from 5 to 32 members that have one or more rings and that have

two straight chain hydrocarbon chains that are substituents with two hydroxyl groups present, one at the end of each pendent chain.

Claim 17. The method of claim 15, wherein polyurethane polymer component is formed from an aliphatic or alicyclic polyol.

Claim 18. The method of claim 1, wherein said applying is one or more of spraying, roller coating, or brush coating.

Claim 19. The method of claim 1, wherein the wherein the pesticide is one or more of bifenthrin, pyrethrin, tefluthrin, lambdacyhalothrin, cyfluthrin, deltamethrin, isofenphos, fenvalerate, cypermethrin, or permethrin.

Claim 20. The method of claim 1, wherein said structure is composed of one or more of wood, wood-containing material, wood-derived material, metal, masonry, cementitous material, metal, ceramic, or fiberglass.

Claim 23. The method of claim 1, wherein said pest species is one or more of microbes, fungi, algae, bacteria, viruses, spores, insects, birds, land animals, mollusks, or rodents.

Claim 24. The method of claim 23, wherein said pest species is one or more of termites, ants, boring wasps, deer, squirrels, mice, rats, clams, oysters, or mussels.

Claim 25. The method of claim 20, wherein said wood structure is one or more of lumber, plywood, particleboard, oriented strand board (OSB), medium density fiberboard (MDF), laminated veneer lumber (LVL), laminated beams, cellulose insulation, paperboard, or kraft paper.

Claim 26. The method of claim 1, wherein said polymer component is one or more of a coating composition, a sealant, a caulk, or an adhesive.

Claim 29. The method of claim 1, wherein the exfoliated colloidal clay has all three dimensions within the size range of 0.5 nanometers to 3000 nanometers.

Claim 30. The method of claim 1, wherein the exfoliated colloidal clay particles have an aspect ratio greater than about 50, thickness less than about 10 nanometers, and

other dimensions greater than about 500 nanometers.

Claim 31. The method of claim 1, wherein the exfoliated colloidal clay is derived from a smectite.

Claim 32. The method of claim 31, wherein said smectite is one or more of is montmorillonite, beidellite, nonttronite, saponite, sauconite, or bentonite.

Claim 33. The method of claim 31, wherein the exfoliated colloidal clay is derived by melting a solid active ingredient and blending it with a smectite to make an expanded product.

Claim 34. The method of claim 31, wherein the exfoliated colloidal clay is derived by blending a fluid active ingredient with a smectite to make an expanded product.

Claim 35. The method of claim 1, wherein the exfoliated colloidal clay is derived from one or more of vermiculite or illite.

EVIDENCE APPENDIX

Declaration of Dominic A. Cataldo, Ph.D. dated September 26, 2008, and which accompanied Appellants' Preliminary Amendment and Response of September 30, 2008.

RELATED PROCEEDINGS APPENDIX

None.